## Project Design Phase

**Date:** 26 June 2025  
**Team ID:** LTVIP2025TMID32000  
**Project Name:** Sustainable Smart City Assistant Using IBM Granite LLM  
**Maximum Marks:** 2 Marks

**Proposed Solution Template**

| **S.No.** | **Parameter** | **Description** |
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| 1 | **Problem Statement (Problem to be solved)** | Urban planners, administrators, and citizens struggle with fragmented systems for policy analysis, feedback management, KPI monitoring, and sustainable development insights. This fragmentation slows decision-making and reduces engagement efficiency. |
| 2 | **Idea / Solution description** | The Sustainable Smart City Assistant integrates IBM Watsonx Granite LLM, Pinecone vector search, and machine learning models to offer modules for policy summarization, citizen feedback, KPI forecasting, anomaly detection, and eco-awareness—all in a single AI-powered platform accessible via a Streamlit dashboard. |
| 3 | **Novelty / Uniqueness** | Unlike typical city dashboards, this assistant enables real-time NLP-driven policy summarization, AI-generated sustainability reports, semantic document search, and citizen-friendly chat support, ensuring both expert and public usability. |
| 4 | **Social Impact / Customer Satisfaction** | Empowers municipalities to act faster, citizens to participate meaningfully, and educators to promote sustainability. Reduces response times, enhances transparency, and promotes proactive urban planning. |
| 5 | **Business Model (Revenue Model)** | Freemium SaaS: Basic features available to all; premium version for municipalities includes advanced analytics, integration with sensors/IoT, and custom branding. Opportunities exist with smart city partnerships and ESG-focused grants. |
| 6 | **Scalability of the Solution** | Modular and cloud-native design ensures scalability across cities and regions. Can expand to include more data sources, languages, and AI services such as computer vision for city surveillance or AR/VR for planning simulations. |